

PROCEEDINGS
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DESCRIPTIONS OF THREE NEW SPECIES OF
CYPRINOID FISHES.

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In the course of some work on the scales of the Cyprinidæ, a few species were found which seem to be new. Three of these are here described; others need to be further elucidated, both as to the constancy of their characters noted, and as to their possible reference to names now placed in synonymy.

The types of the species here described have been deposited in the United States National Museum.

Richardsonius thermophilus sp. nov.

Type, No. 64152, U. S. Nat. Mus., a specimen 68 mm. long.

Type Locality.—Warm Springs, Harney Co., Oregon. Collector, Prof. John O. Snyder, for the U. S. Bureau of Fisheries.

Head 4 in length; depth 4; eye 3.3 in head; snout 4; maxillary 2.75; dorsal 10; anal 11; scales 12-56-7.

Form essentially as in *R. balteatus*; snout very obtuse; scales with very strong circuli.

Color (in alcohol).—Scarcely silvery; back and upper half of side finely punctulate and dark grayish, under parts straw color; peritoneum not silvery, but with large and close diffuse brownish spots.*

This fish has been discussed by Prof. J. O. Snyder in Bull. Bureau of Fisheries, XXVII (1907), p. 85. The following description of its colors is given by him:

“Dorsal surface of body deep green; a narrow, diffuse, brassy stripe extending from eye along lateral line, falling below it posteriorly, forming a ventral border to the greenish dorsal area; an indistinct dark greenish stripe extends from eye along the side just below the brassy band; breast and abdomen silvery; sides just below greenish band bright

*This is probably not a direct effect of the local environments; for *Rutilus columbianus*, from the same Warm Springs, has the peritoneum thickly beset with stellate brown spots, and sprinkled with black dots.

red; snout anterior to eye greenish; cheeks below eye and opercle brassy; fins golden. Immediately after death the greenish dorsal area turns to a steel blue."

From the particulars given by Prof. Snyder, it is probable that the fish of Silver Creek, Oregon, is the same. Prof. Snyder counted the anal fin rays of 124 examples of *R. balteatus*, with this result:

| Number of rays | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------------------|---|----|----|----|----|----|----|----|
| Warm Springs specimens. | — | 7 | 20 | 4 | 1 | — | — | — |
| Silver Creek " " | 2 | 8 | 30 | 18 | 1 | — | — | — |
| Silvies River " " | — | — | — | 2 | 7 | 8 | 13 | 3 |



Figure 1.

Scale of *Richardsonius thermophilus*
Evermann & Cockerell, showing circuli.

The generic name *Richardsonius* is used in place of *Leuciscus*, because a study of various species of true *Leuciscus* at the British Museum last summer shows that none of the American species really belongs to that genus, the character of the scales being essentially different. It is equally impossible to use *Phoxinus* for any of the American species, as the true *Phoxinus* (*Leuciscus phoxinus*) has a scale with basal and apical radii, and except for the greater number of circuli, almost the same as that of *Chrosomus*. The American species of "*Phoxinus*" are as far from this type as is possible among the fishes called *Leuciscus*. The specimen of *L. phoxinus* is from Leyn Arenig, Merioneth, 2,000 ft. (*H. E. Forrest*; British Museum Collection).

***Notropis kendalli* sp. nov.**

Type, No. 64150, U. S. Nat. Mus., a specimen 56 mm. long.

Type Locality.—Cross Lake Thoroughfare, Maine. Collector, Dr. W. C. Kendall, July 9, 1903, for the U. S. Bureau of Fisheries.

Compared with *Notropis muskoka* Meek, to which this species is closely related, our fish is a deeper fish; the lateral stripe is much more heavily pigmented (probably not a specific character) and the snout is somewhat

longer and more pointed. The very thin scales have fewer radii. Meek described *N. muskoka* as more slender than *cayuga*, which is certainly not true of the Maine fish. It must be supposed that *N. kendalli* and *cayuga* are independent offshoots from the northern *muskoka* stock.

The characters of *N. kendalli* are contrasted with those of other species of *Chriope* in the tables in the paper on *Notropis*.

Notropis universitatis sp. nov.

Type, No. 64151, U. S. Nat. Mus., a specimen* 63 mm. long.

Type Locality.—Boulder Creek, Boulder, Colorado. Collector, Prof. Theo. D. A. Cockerell, 1907.

Close to *N. zonatus*, but with smaller scales and different coloration. There are 45 scales in the lateral line and 9 between the origin of the dorsal and the lateral line, as against 42 and 6 in *N. zonatus*. A pale orange dorsal band on a bright straw-yellow ground, the scales minutely black-dotted, but not appearing dusky margined; sides strongly silvery; lateral line complete; a grayish lateral stripe; dorsal and caudal fins yellowish; dorsal and chin black-speckled.

* Described as *N. notatus* var. in University of Colorado Studies, April, 1908, p. 170.